

HISTORIC PROPERTY INVENTORY FORM

IDENTIFICATION SECTION

Field Site No. 181-N OAHP No. Date Recorded 10-Feb-95

Site Name Historic River Water Pump House

Common

Field Recorder Philip M. Bogen, Evaluator: Darby Stapp

Owner's Name U.S. Department of Energy, Richland Operations Office

Address P.O. Box 550

City/State/Zip Code Richland, WA 99352

Status

☒ Survey/Inventory

☐ National Register

☐ State Register

☐ Determined Eligible

☐ Determined Not Eligible

☐ Other (HABS, HAER, NHL)

☐ Local Designation

Photography

Photography Neg. No. 94010643-14c

(Roll No. & Frame No.)

View of SE corner

Date Jan. 1994

Classification

District Status ☒ NR

Contributing ☒

District/Thematic Nomination Name Hanford Site Manhattan Project and Cold War Era Historic District

Description Section

Materials & Features/Structural Types

Building Type Industrial

Plan Rectangular

Structural System Concrete Blocks

No. of Stories 1

Roof Type

☐ Gable

☒ Flat

☐ Monitor

☐ Gambrel

☐ Shed

☐ Hip

☐ Pyramidal

☐ Other (specify)

Cladding (exterior Wall Surfaces)

☐ Log

☐ Horizontal Wood Siding

☐ Rustic/Drop

☐ Clapboard

☐ Wood Shingle

☐ Board and Batten

☐ Vertical Board

☐ Asbestos/Asphalt

☐ Brick

☐ Stone

☐ Stucco

☐ Terra Cotta

☒ Concrete/Concrete Block

☐ Vinyl/Aluminum Siding

☐ Metal (specify)

☐ Other (specify)

Roof Material

☐ Wood Shingle

☐ Wood Shake

☐ Composition

☐ Slate

☐ Tar/Built-up

☐ Tile

☐ Metal (specify)

☒ Other (specify) Concrete

☐ Not visible

Foundation

☐ Log

☐ Post & Pier

☐ Stone

☐ Brick

☐ Not visible

Concrete

☐ Block

☒ Poured

☐ Other (specify)

Integrity

(Include detailed description in Description of Physical Appearance)

Intact

Slight

Moderate

Extensive

Changes to plan

Changes to windows

Changes to original cladding

Changes to interior

Other (specify)

State of Washington, Department of Community Development

Office of Archaeology and Historic Preservation

111 21st Avenue Southwest, Post Office Box 48343

Olympia, Washington 98504-8343 (206)753-4011

LOCATION SECTION

Address 100-N Reactor Area, Building 181-N

City/Town/County/Zip Code Richland, WA/Benton County/99352

Twp. 14N Range 26E

Section 28 1/4 Section NW 1/4 1/4 Sec SE

Tax No./Parcel No.

Quadrangle or map name Coyote Rapids 7.5 min. series

UTM References Zone 11 Easting 303974 Northing 5172485

Plat/Block/Lot

Supplemental Map(s) 100-N Area Buildings



High Styles/Forms (Check one or more of the following)

☐ Greek Revival

☐ Gothic Revival

☐ Italianate

☐ Second Empire

☐ Romanesque Revival

☐ Stick Style

☐ Queen Anne

☐ Shingle Style

☐ Colonial Revival

☐ Beaux Arts/Neoclassical

☐ Chicago/Commercial Style

☐ American Foursquare

☐ Mission Revival

☐ Spanish Colonial Revival/Mediterranean

☐ Tudor Revival

☐ Craftsman/Arts & Crafts

☐ Bungalow

☐ Prairie Style

☐ Art Deco/Art Moderne

☐ Rustic Style

☐ International Style

☐ Northwest Style

☐ Commercial Vernacular

☐ Residential Vernacular (see below)

☒ Other (specify) Industrial Vernacular

Vernacular House Types

☐ Gable Front

☐ Gable Front and Wing

☐ Side Gable

☐ Cross Gable

☐ Pyramidal/Hipped

☐ Other (specify)

NARRATIVE SECTION

Study Unit Themes (check one or more of the following)

- ☐ Agriculture
- ☐ Architecture/Landscape Architecture
- ☐ Arts
- ☐ Commerce
- ☐ Communications
- ☐ Community Planning/Development

- ☐ Conservation
- ☐ Education
- ☐ Entertainment/Recreation
- ☐ Ethnic Heritage (specify)
- ☐ Health/Medicine
- ☐ Manufacturing/Industry
- ☐ Military

- ☐ Politics/Government/Law
- ☐ Religion
- ☐ Science & Engineering
- ☐ Social Movements/Organizations
- ☐ Transportation
- ☒ Other (specify) Manhattan Project & Cold War Era
- ☒ Study Unit Sub-Theme(s) (specify)
 - Cold War/Nuclear Fuel Production
 - Reactor Operations, Water Treatment

Statement of Significance

Date of Construction	<u>1964</u>	Architect/Engineer/Builder	<u>General Electric/Burns and Roe</u>
<input checked="" type="checkbox"/>	In the opinion of the surveyor, this property appears to meet the criteria of the National Register of Historic Places.		
<input checked="" type="checkbox"/>	In the opinion of the surveyor, this property is located in a potential historic district (National and/or local).		

The circulating raw water system originates at the 181-N River Pump House and is designed to supply the normal water requirements of the 100-N Area, with the exception of Washington Public Power Supply System facilities. Major services which this system supplies include the dump condensers in the 109-N Building, the turbine-surface condensers in the 184-N Building, the High Lift Pump House (182-N), the Water Filter Plant (183-N), the graphite cooling heat exchangers in the 105-N Building, the Plant Service Power House (184-N), and various heat exchangers.

Columbia River water from the building forebay flows through bar screens and traveling screens to screen out materials that might cause damage to the equipment. The water then enters four independent pump suction wells, the bottoms of which are 61 ft below the operating floor. The system is supplied by four deep-well axial flow pumps having design ratings of 105,000 gal/min each at 112-ft head. The pumps are driven by 3,500 hp, 13.8 kV, 360 rpm, outdoor-type synchronous motors. Pumps 1 and 2 discharge into a 102-in. distribution header, and pumps 3 and 4 discharge into a second distribution header of equal size. Electric power to pump motors 1 and 3 is supplied by the Bonneville Power Administration system, and to motors 2 and 4 from the turbine generator in the 184-N Building. Since the motors of the pumps supplying each distribution header are supplied from separate power sources, adequate water supply is assured to shut down the reactor safely in case of failure of either power source or of a ruptured distribution header.

Three pumps adequately served the raw water requirements for approximately nine months of the year, with four pumps being required during the summer months. Motor control switches were located on the 105-N Graphite Panel and emergency stop switches at the 181-N Building.

This property is not associated with an important person (Criterion B), does not possess any distinctive architectural features or methods of construction (Criterion C), and does not qualify under Criterion D as the principal source of important information. However, the 181-N Building qualifies under Criterion A due to its association with the Cold War production of plutonium at N Reactor, and its contribution to Reactor Operations, specifically the Water System. Therefore, it is the conclusion of the U.S. Department of Energy that the 181-N Building is eligible under Criterion A for inclusion on the National Register of Historic Places as a contributing property within the Hanford Site Manhattan Project and Cold War Era Historic District.

Description of Physical Appearance

The 181-N Building is a rectangular, one-story, reinforced concrete block building with a flat concrete roof, masonry in-fill walls and a poured concrete foundation. The building measures approximately 52 ft by 36 ft (16 m by 11 m); 1,872 ft² (171.6 m²). The 181-N Building is no longer in use and has undergone no significant changes.

The N Reactor UTM coordinates are as follows: Northeast corner - 303974E, 5172485N; southeast corner - 303974E, 5171639N; southwest corner - 303069E, 5171639N; northwest corner - 303069E, 5172485N.

Major Bibliographic References

Rollie Warner, Engineer, Columbia Energy & Environmental Services, Inc.

Bechtel Hanford, Inc. 1994. "Pre-Existing" Conditions Survey of Hanford Site Facilities to be Modified by Bechtel Hanford, Inc.

Architectural Floor & Roof Plan Elevation & Sections, Drawing No. H-1-31200, 1964.